



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/832,160	04/09/2001	Salman Akram	3846.2US(98-0796.2)	8501

24247 7590 05/28/2004

TRASK BRITT
P.O. BOX 2550
SALT LAKE CITY, UT 84110

EXAMINER

GRAYBILL, DAVID E

ART UNIT PAPER NUMBER

2827

DATE MAILED: 05/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/832,160

Applicant(s)

AKRAM ET AL.

Examiner

David E Graybill

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 12-34 is/are pending in the application.
- 4a) Of the above claim(s) 4,9 and 23-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-8 and 12-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2001 and 22 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3-22-4.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

The terminal disclaimer filed on 2-26-2 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of 6228687 has been reviewed and is accepted. The terminal disclaimer has been recorded.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because, in Figure 1, reference characters 10 and 18 designate the same part, in Figures 1A, 6B and 6C, reference characters 110, 118 and 126 designate the same part, in Figure 8A, reference characters 210 and 218 designate the same part, in Figure 8D, reference characters 210' and 218' designate the same part, in Figure 9A, reference characters 310 and 318 designate the same part, and in Figures 10A and 10B, reference characters 410 and 418 designate the same part.

Also, The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because each reference character 18 and 118 has been used to designate multiple different parts.

To further clarify, 37 CFR 1.84 (q) instructs, "Lead lines are those lines between the reference characters and the details referred to. . . . They must originate in the immediate proximity of the reference character and extend to the feature indicated." 37 CFR 1.84 (r) instructs, "Arrows may be used at the ends of lines, provided that their meaning is clear, as follows: (1) On a

lead line, a freestanding arrow to indicate the entire section towards which it points."

In the drawing objection, the reference characters identified as designating the same part are improperly associated with lead lines having freestanding arrows pointing to the same sections, and each reference character identified as being used to designate multiple different parts is improperly associated with lead lines which both extend to indicated features and which indicate an entire section toward which a freestanding arrow points.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because Figures 6B and 6C do not include reference character 118 mentioned in the description at page 19, lines 1-2.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. Information on current drawing correction practice is available at <http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/moreinfoamdtprac.htm> . The objection to the drawings will not be held in abeyance.

In the rejections *infra*, generally, reference labels are recited only for the first recitation of identical claim elements.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 5-8 and 12-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Hashimoto (6255737).

At column 1, lines 38-53; column 1, line 66 to column 2, line 6; column 4, line 63 to column 8, line 20; and column 10, line 52 to column 12, line 8, Hashimoto discloses a method for fabricating a chip-scale package, comprising: positioning a preformed polymeric film 64 including at least one aperture 64a that extends substantially longitudinally therethrough over a semiconductor device with the at least one aperture in substantial alignment with a corresponding bond pad 62 of the semiconductor device; and introducing conductive material 68 into the at least one aperture following the positioning; adhering the preformed polymeric film to the semiconductor device; defining the at least another aperture through the preformed polymeric film; wherein the defining is effected before the positioning, wherein the introducing comprises bonding the conductive material to the

corresponding bond pad, wherein the introducing comprises depositing the conductive material onto the preformed polymeric film and within the at least one aperture, wherein the depositing comprises physical vapor depositing "sputtering" the conductive material, wherein the introducing is effected after the positioning; forming at least one contact 20 at an end of the conductive material, opposite the semiconductor device; placing a conductive structure 26 adjacent the at least one contact; applying solder 26 to the at least one contact; positioning at least one conductive trace 58 on the preformed polymeric film and in communication with the conductive material; forming at least one contact in communication with the conductive trace; placing a conductive structure adjacent the at least one contact; applying solder to the at least one contact; and placing the preformed polymeric film on at least a portion of a peripheral edge of the semiconductor device; and placing polymeric material 28 at least laterally adjacent the conductive structure.

To further clarify the disclosure of positioning a preformed polymeric film including at least one aperture, it is noted that the film including the at least one aperture is preformed relative to the introducing step because it is formed in advance of the introducing step. In any case, the cited disclosure that the film "may have holes formed mechanically by predrilling or similar

means, and a positioning process may be used for subsequent alignment on the wafer" is an explicit disclosure that the film is preformed.

To further clarify the disclosure of placing the preformed polymeric film on at least a portion of a peripheral edge of the semiconductor device, it is noted that in the embodiment of the "Sixth Basic Art" the film is placed on the entire wafer 60 including the edge of the device 1 before dicing.

Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto as applied to claim 17, and further in combination with Jacobs (6294407).

Hashimoto does not appear to explicitly disclose placing a conductive elastomer over at least one conductive structure, and placing another conductive structure in contact with the conductive elastomer, opposite the at least one conductive structure.

Nonetheless, at column 5, line 61 to column 6, line 46, and column 14, line 44 to column 15, line 2, Jacobs discloses placing a conductive (thermally) elastomer 106 over at least one conductive structure 104, and placing another conductive structure 112a in contact with the conductive elastomer, opposite the at least one conductive structure.

Furthermore, it would have been obvious to combine the disclosures of Jacobs and Hashimoto because it would enable external electrical connection and cooling.

Applicant's amendment and remarks filed 3-22-4 have been fully considered, are addressed by the rejections supra, and are further addressed infra.

Applicant contends that Hashimoto does not disclose the limitations of claims 19 and 20.

These contentions are respectfully traversed because, as elucidated in the rejection, Hashimoto discloses these limitations.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any telephone inquiry of a general nature or relating to the status (MPEP 203.08) of this application or proceeding should be directed to Group 2800 Customer Service whose telephone number is 571-272-2815.

Any telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (571) 272-1930. Regular office hours: Monday through Friday, 8:30 a.m. to 6:00 p.m.

The fax phone number for group 2800 is (703) 872-9306.



David E. Graybill
Primary Examiner
Art Unit 2827

D.G.
26-May-04